

What Is Claimed Is:

1. A method for transmitting data in messages on a bus system, the method comprising:  
transmitting messages in transmission time slots at a preselected transmission rate, a transmission rate within a transmission time slot being changeable in such a way that a message provided for the transmission time slot may be transmitted repeatedly within the transmission time slot.
2. The method according to claim 1, further comprising:  
comparing at least two of the messages transmitted repeatedly within a transmission time slot with one another; and  
detecting a fault in the event of deviations, with regard to at least parts of the messages.
3. The method according to claim 2, wherein N of the messages transmitted repeatedly within a transmission time slot are compared with one another, and, within the scope of an M out of N deviation with regard to at least parts of the messages, at least one message is detected as being faulty, the messages detected as faulty being rejected, with integral  $N > 2$  and integral M and  $N/2 < M < N$ .
4. The method according to claim 1, further comprising unambiguously allocating the messages to transmission time slots.
5. The method according to claim 1, further comprising multiplying the transmission rate within a transmission time slot by an integral factor.
6. The method according to claim 1, further comprising structuring the message in such a way that a beginning and an end of the message are unambiguously detectable.
7. The method according to claim 6, wherein each of the messages has a first identifier for the beginning of the message and a second identifier for the end of the

message.

8. The method according to claim 1, wherein the messages contain an identification and data, the identification identifying data content, and the messages transmitted repeatedly within a transmission time slot are identical at least with regard to the identification and the data.

9. The method according to claim 8, further comprising:

comparing at least two of the messages transmitted repeatedly within a transmission time slot with one another; and

detecting a fault in the event of deviations with regard to at least one of the identification and the data.

10. The method according to claim 8, wherein N of the messages transmitted repeatedly within a transmission time slot are compared with one another, and, within the scope of an M out of N deviation with regard to at least one of the identification and the data, at least one message is detected as being faulty, the messages detected as faulty being rejected, with integral  $N > 2$  and integral M and  $N/2 < M < N$ .

11. A device for transmitting data in messages, comprising:

first means for transmitting messages in transmission time slots at a preselected transmission rate; and

second means for changing a transmission rate within a transmission time slot in such a way that a message provided for the transmission time slot may be transmitted repeatedly within the transmission time slot.

12. The device according to claim 11, further comprising third means for unambiguously allocating the messages to particular transmission time slots.

13. The device according to claim 11, further comprising a memory device for storing the messages transmitted repeatedly within a particular transmission time

slot in a chronological order of their transmission.

14. A bus system comprising a device for transmitting data in messages, the device including:

first means for transmitting messages in transmission time slots at a preselected transmission rate; and

second means for changing a transmission rate within a transmission time slot in such a way that a message provided for the transmission time slot may be transmitted repeatedly within the transmission time slot.